Fourth Grade
2016 Science Standards Resource Guide

Physical Science				
2016 Indiana Academic Standards	**Clarifying Statements**	**Vocabulary**	**Crosscutting Concept**	**Disciplinary Core Idea**
4.PS.1 Investigate transportation systems and devices that operate on or in land, water, air and space and recognize the forces (lift, drag, friction, thrust and gravity) that affect their motion.		-Lift -Thrust -Drag -Gravity -Friction	Cause and Effect Energy & Matter Structure and Function Stability and Change	PS2.A: Forces and Motion PS3.C: Relationship Between Energy and Forces
4.PS.2 Investigate the relationship of the speed of an object to the energy of that object.		-Kinetic Energy -Speed -Velocity -Acceleration	Energy and Matter Structure and Function	PS2.A: Forces and Motion PS3.A: Definitions of Energy

4.PS.3 Investigate how multiple simple machines work together to perform everyday tasks.		-Lever -Pulley -Inclined Plane -Wedge -Screw -Wheel & Axle		PS2.A: Forces and Motion PS2.B Types of Interactions
4.PS.4 Describe and investigate the different ways in which energy can be generated and/or converted from one form of energy to another form of energy.		-Kinetic Energy -Potential Energy	Stability and Change	PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer
4.PS.5 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.		-Circuit -Series Circuit -Parallel Circuit -Switch -Resistor	Stability and Change	PS3.A: Definitions of Energy PS3.B: Conservation of Energy and Energy Transfer

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Earth and Space Science				
2016 Standards	**Clarifying Statements**	**Vocabulary**	**Crosscutting Concepts**	**Disciplinary Core Idea**
4.ESS.1 Investigate how the moon appears to move through the sky and it changes day to day, emphasizing the importance of how the moon impacts the Earth, the rising and setting times, and solar and lunar eclipses.		-Phases -Waxing -Waning -Quarter	Patterns Systems and System Models Stability and Change	ESS1.B: Earth and the Solar System
4.ESS.2 Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.		-Natural Resource -Nonrenewable Resource	Energy and Matter	ESS3.A Natural Resources ESS3.C Human Impacts on Earth Systems

4.ESS.3 Describe how geological forces change the shape of the land suddenly and over time.		-Earthquake -Volcano -Erosion -Weathering	Patterns Cause and Effect Stability and Change	ESS2.A: Earth's Materials and Systems ESS2.B: Plate Tectonics and Large-Scale System Interactions
4.ESS.4 Develop solutions that could be implemented to reduce the impact of humans on the natural environment and the natural environment on humans.		-Recycling -Reclamation -Conservation	Cause and Effect Stability and Change	ESS3.A: Natural Resources ESS3.C: Human Impacts on Earth Systems

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Life Science				
2016 Indiana Academic Standards	**Clarifying Statements**	**Vocabulary**	**Crosscutting Concepts**	**Disciplinary Core Ideas**
4.LS.1 Observe, analyze, and interpret how offspring are very much, but not exactly, like their parents or one another. Describe how these differences in physical characteristics among individuals in a population may be advantageous for survival and reproduction.		-Traits -Inherited -Acquired -Competition	Patterns	LS3.A: Inheritance of Traits LS3.B: Variation of Traits
4.LS.2 Use evidence to support the explanation that a change in the environment may result in a plant or animal will survive and reproduce, move to a new location, or die.		-Stimulus	Cause and Effect	LS2.A: Interdependent Relationships in Ecosystems LS2.C: Ecosystem Dynamics, Functioning, and Resilience

4.LS.3 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction in a different ecosystems.		-Survival -Growth -Behavior -Reproduce -Reproduction		LS1.A: Structure and Function LS1.B: Growth and Development of Organisms

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Engineering				
2016 Indiana Academic Standards	**Clarifying Statements**	**Vocabulary**	**Crosscutting Concepts**	**Disciplinary Core Ideas**
3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.			Scale, Proportion, and Quantity Systems and System Models	ETS1.A: Defining and Delimiting an Engineering Problem
3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.				ETS1.B: Developing Possible Solutions ETS1.C: Optimizing the Design Solution
3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.		-Prototype	Systems and System Models	